

National Aeronautics and
Space Administration



NASA Glenn Research Center

A Perspective on NASA Glenn Research Center and the Future of Technology

Research Day
Cleveland State University, College of Engineering

Dr. Rickey Shyne, P.E.
Director, Research & Engineering

Friday, October 30, 2015



National Aeronautics and
Space Administration



MARCH 3, 1915

JANUARY 23, 1941

OCTOBER 1, 1958

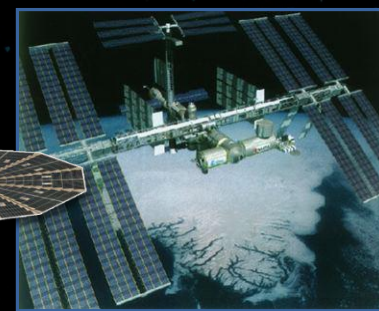
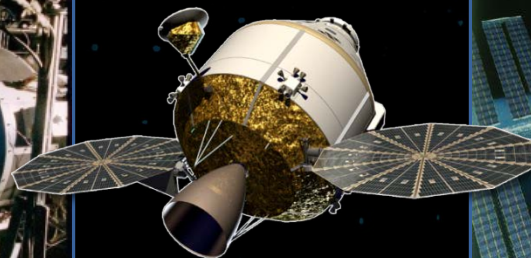
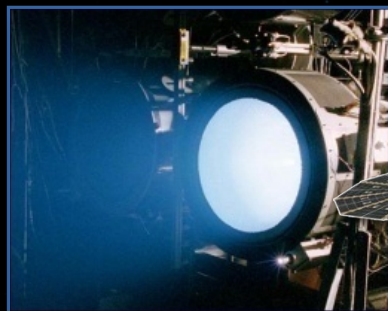
CELEBRATING
75
1941-2016
GLENN RESEARCH CENTER
OUR PAST-OUR PRESENT-YOUR FUTURE



Glenn Research Center

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Glenn's Mission: We **drive** Research, Technology, and Systems to **advance** Aviation, **enable** Exploration of the Universe, and **improve** Life on Earth



Lewis Field (Cleveland)

- 350 acres
- 1568 civil servants and 1560 contractors



Plum Brook Station (Sandusky)

- 6500 acres
- 18 civil servants and 97 contractors



Glenn Core Competencies

4

Air-Breathing
Propulsion



In-Space Propulsion
and Cryogenic
Fluids Management



Physical Sciences
and Biomedical
Technologies
in Space



Communications
Technology and
Development



Power, Energy
Storage and
Conversion



Materials and
Structures for
Extreme
Environments





NASA's Aeronautics Contributions

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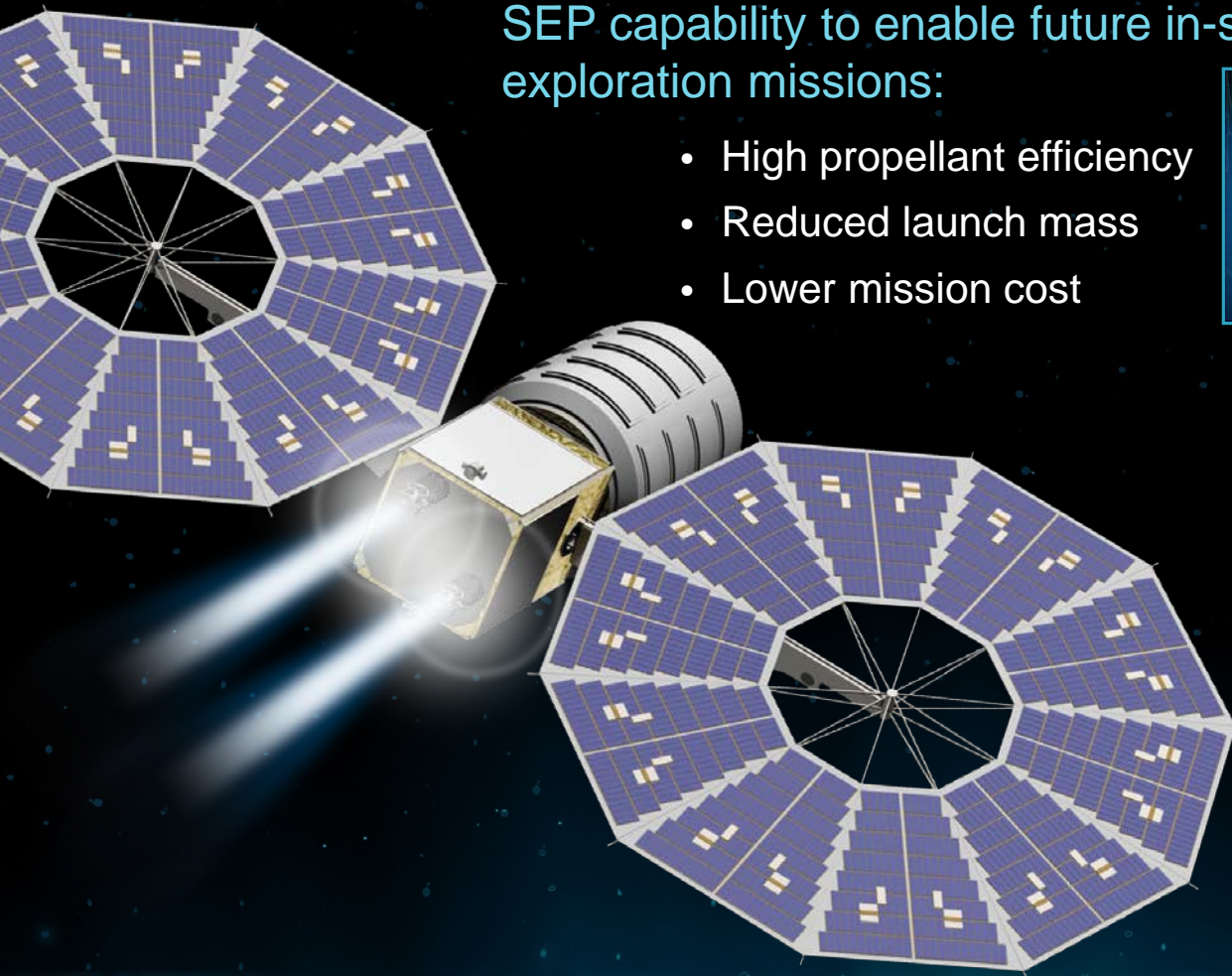
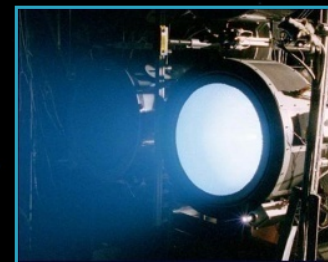


30k-W-Class Solar Electric Propulsion (SEP)

6

NASA is developing high-performance SEP capability to enable future in-space exploration missions:

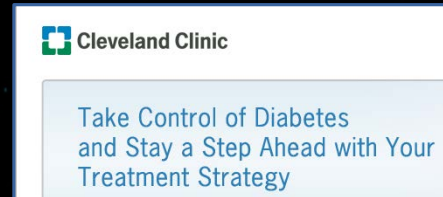
- High propellant efficiency
- Reduced launch mass
- Lower mission cost



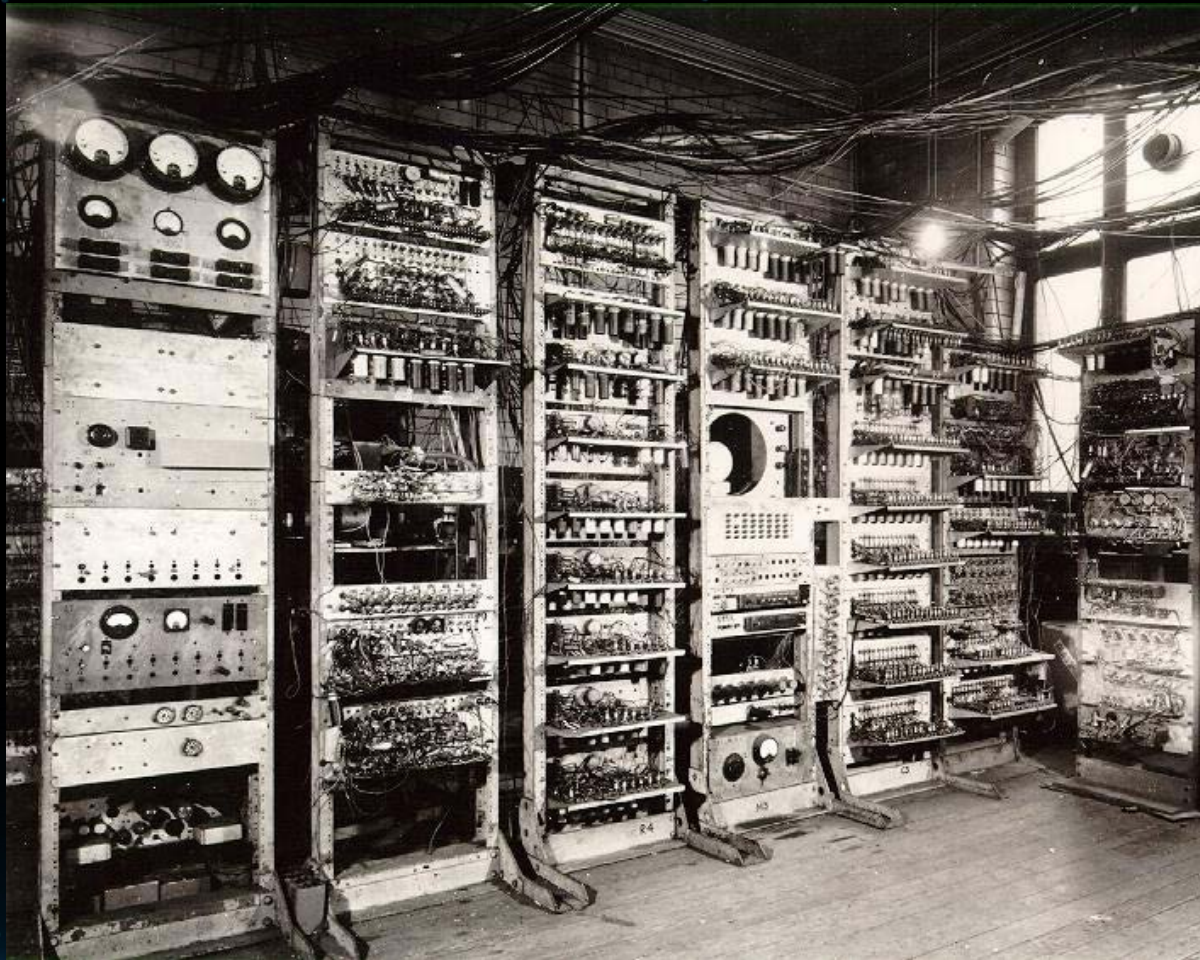
NASA External Impacts

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- Chevy combined NASA developed topology mapping software with unique Lotus algorithms to directly or indirectly control vehicle speed to maximize MPG based on road conditions
- Cleveland Clinic used NASA flow visualization software with patient MRI images to visualize stresses during walking to study how diabetic foot ulcers develop
- An inflatable antenna developed with GRC membrane reflector and shape-memory polymer antenna technology enables communications for emergency personnel



Do you know what this?



Do you know what this?



QUESTIONS???

BACKUP

How I spent my summer Vacation



